To our customers,

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Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

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Issued by: Renesas Electronics Corporation (http://www.renesas.com)

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RENESAS

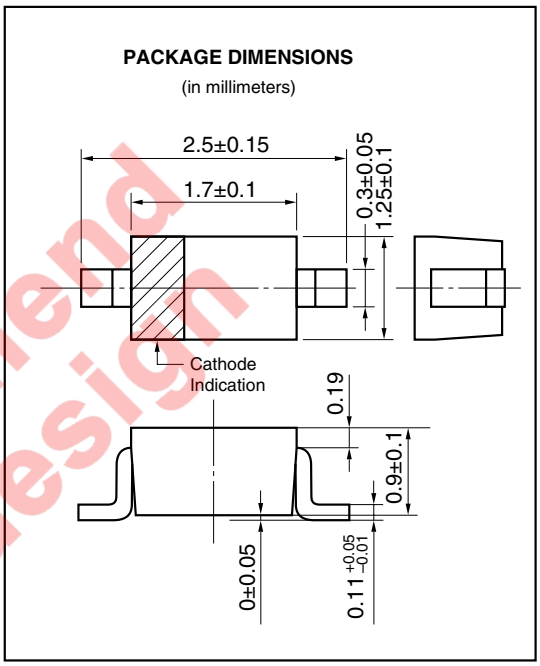
ZENER DIODES

RD4.7SL to RD39SL

ZENER DIODES
200 mW 2 PIN SUPER MINI MOLD

DESCRIPTION

Type RD4.7SL to RD39SL Series are 2 PIN Super Mini Mold Package zener diodes possessing an allowable power dissipation of 200 mW featuring low noise and sharp breakdown characteristic. They are intended for use in audio equipment, instrument equipment.



FEATURES

- Low Noise
- Sharp Breakdown characteristic.
- Vz: Applied E24 standard.

APPLICATIONS

Circuits for Constant Voltage, Constant Current, Waveform Clipper, Surge absorber, etc.

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Power Dissipation	P	200 mW
Forward Current	I_F	100 mA
Reverse Surge Power	P_{RSM}	2.2W (at t=10 μs/1 pulse) Show fig. 8
Junction Temperature	T_j	150°C
Storage Temperature	T_{stg}	–55 to +150°C

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ELECTRICAL CHARACTERISTICS (T_A = 25 ± 2°C)

Type Number	Class	Zener Voltage Vz (V)[Note 1]			Dynamic Impedance Zz (Ω)[Note 2]		Reverse Current I_R (μA)	
		MIN.	MAX.	Iz (mA)	MAX.	Iz (mA)	MAX.	V_R (V)
RD4.7SL	N	4.39	4.91	0.5	800	0.5	2	1.0
	N1	4.39	4.62					
	N2	4.52	4.76					
	N3	4.66	4.91					
RD5.1SL	N	4.81	5.36	0.5	500	0.5	2	1.5
	N1	4.81	5.05					
	N2	4.95	5.20					
	N3	5.10	5.36					
RD5.6SL	N	5.26	5.91	0.5	200	0.5	1	2.5
	N1	5.26	5.54					
	N2	5.44	5.73					
	N3	5.63	5.91					
RD6.2SL	N	5.81	6.53	0.5	100	0.5	1	3.0
	N1	5.81	6.11					
	N2	6.01	6.32					
	N3	6.21	6.53					
RD6.8SL	N	6.41	7.14	0.5	60	0.5	0.5	3.5
	N1	6.41	6.74					
	N2	6.60	6.94					
	N3	6.80	7.14					
RD7.5SL	N	7.00	7.83	0.5	60	0.5	0.5	4.0
	N1	7.00	7.35					
	N2	7.21	7.60					
	N3	7.46	7.83					
RD8.2SL	N	7.69	8.61	0.5	60	0.5	0.5	5.0
	N1	7.69	8.08					
	N2	7.94	8.34					
	N3	8.20	8.61					
RD9.1SL	N	8.47	9.51	0.5	60	0.5	0.5	6.0
	N1	8.47	8.91					
	N2	8.76	9.21					
	N3	9.06	9.51					
RD10SL	N	9.35	10.51	0.5	60	0.5	0.1	7.0
	N1	9.35	9.82					
	N2	9.66	10.16					
	N3	10.00	10.51					
RD11SL	N	10.32	11.50	0.5	60	0.5	0.1	8.0
	N1	10.32	10.84					
	N2	10.64	11.17					
	N3	10.97	11.50					

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ELECTRICAL CHARACTERISTICS (T_A = 25 ± 2°C)

Type Number	Class	Zener Voltage Vz (V)[Note 1]			Dynamic Impedance Zz (Ω)[Note 2]		Reverse Current I_R (μA)	
		MIN.	MAX.	Iz (mA)	MAX.	Iz (mA)	MAX.	V_R (V)
RD12SL	N	11.28	12.52	0.5	80	0.5	0.1	9.0
	N1	11.28	11.83					
	N2	11.59	12.17					
	N3	11.93	12.52					
RD13SL	N	12.29	13.86	0.5	80	0.5	0.1	10
RD15SL	N	13.63	15.38	0.5	80	0.5	0.1	11
RD16SL	N	15.13	16.91	0.5	80	0.5	0.1	12
RD18SL	N	16.63	18.81	0.5	80	0.5	0.1	13
RD20SL	N	18.51	20.79	0.5	100	0.5	0.1	15
RD22SL	N	20.46	22.82	0.5	100	0.5	0.1	17
RD24SL	N	22.42	25.17	0.5	120	0.5	0.1	19
RD27SL	N	24.75	27.95	0.5	150	0.5	0.1	21
RD30SL	N	27.38	31.04	0.5	200	0.5	0.1	23
RD33SL	N	30.30	33.97	0.5	250	0.5	0.1	25
RD36SL	N	33.08	36.83	0.5	300	0.5	0.1	27
RD39SL	N	35.78	39.67	0.5	360	0.5	0.1	30

Note 1. Vz is tested with puls (40 ms).

2. Zz is measured at Iz by given a very small A.C. current signal.

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TYPICAL CHATACTERISTICS (T_A = 25°C)

Fig. 1 POWER DISSIPATION vs. AMBIENT TEMPERATURE

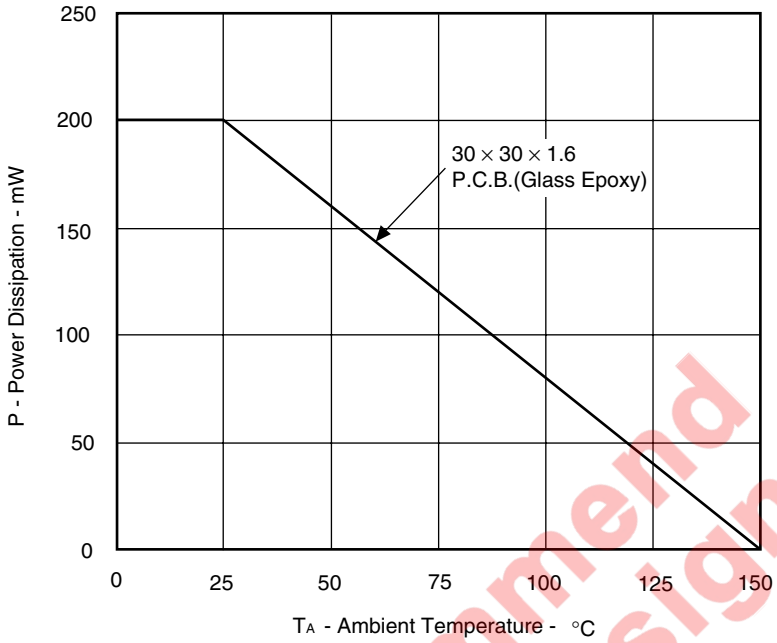

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Fig.2 ZENER CURRENT vs. ZENER VOLTAGE

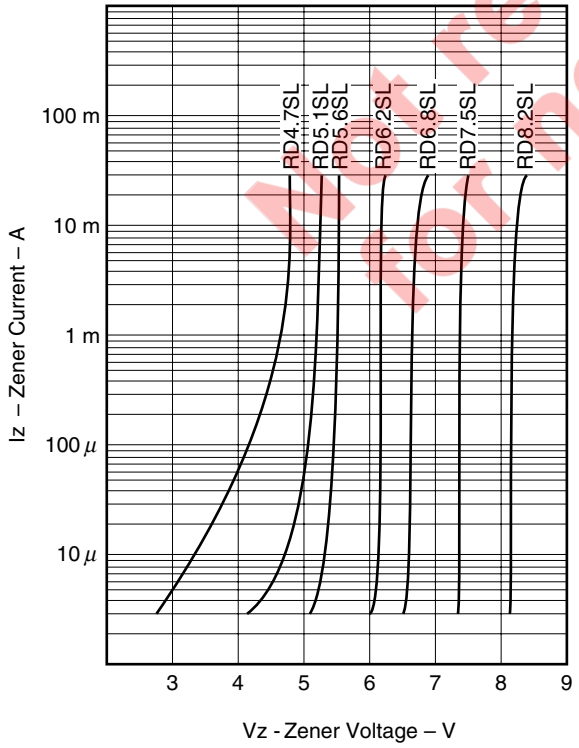

Fig. 3 ZENER CURRENT vs. ZENER VOLTAGE

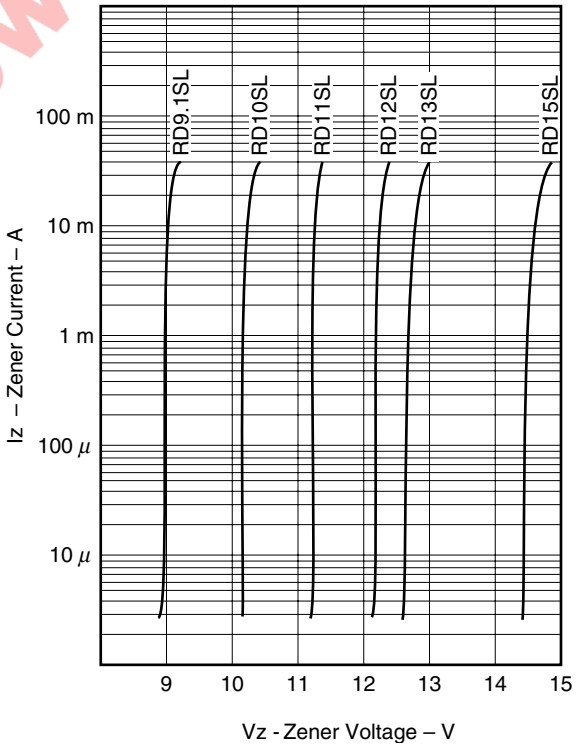

Fig. 4 ZENER CURRENT vs. ZENER VOLTAGE

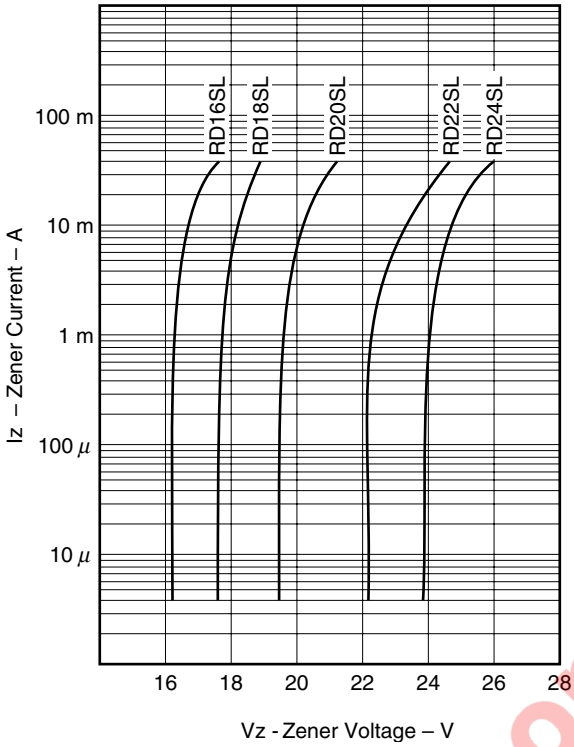

Fig.5 ZENER CURRENT vs. ZENER VOLTAGE

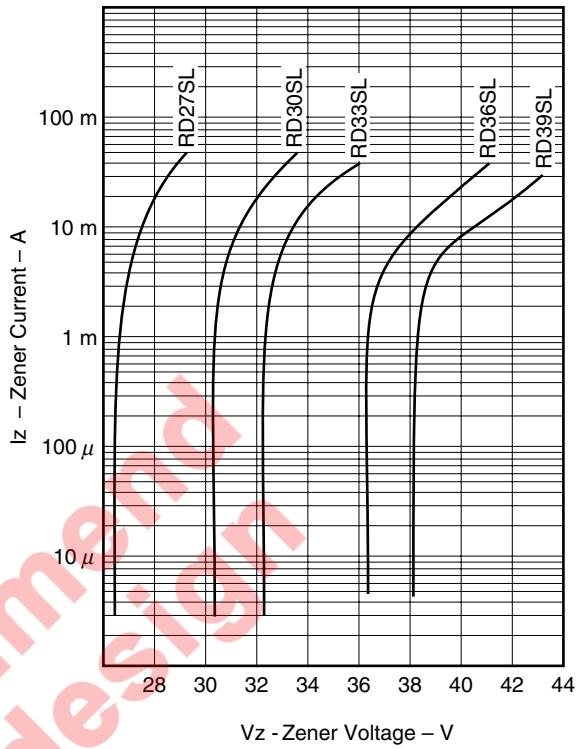

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Fig. 6 ZENER VOLTAGE TEMPERATURE COEFFICIENT vs. ZENER VOLTAGE

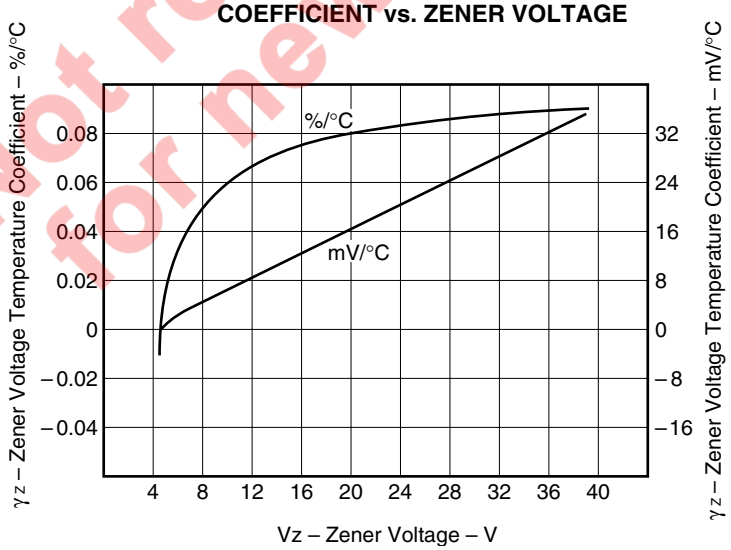

Fig.7 TRANSIENT THERMAL IMPEDANCE CHARACTERISTIC

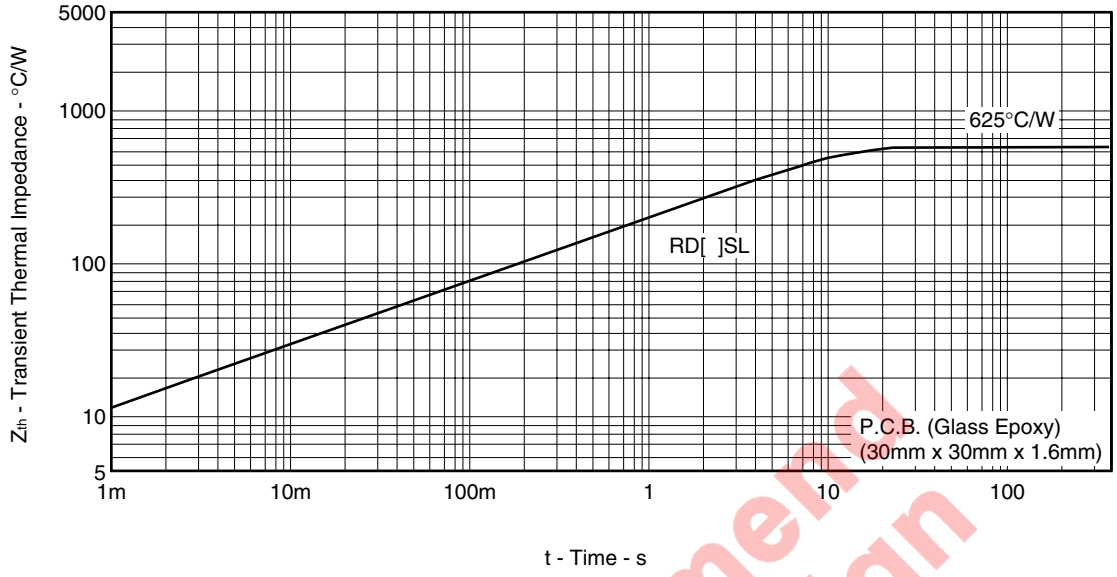

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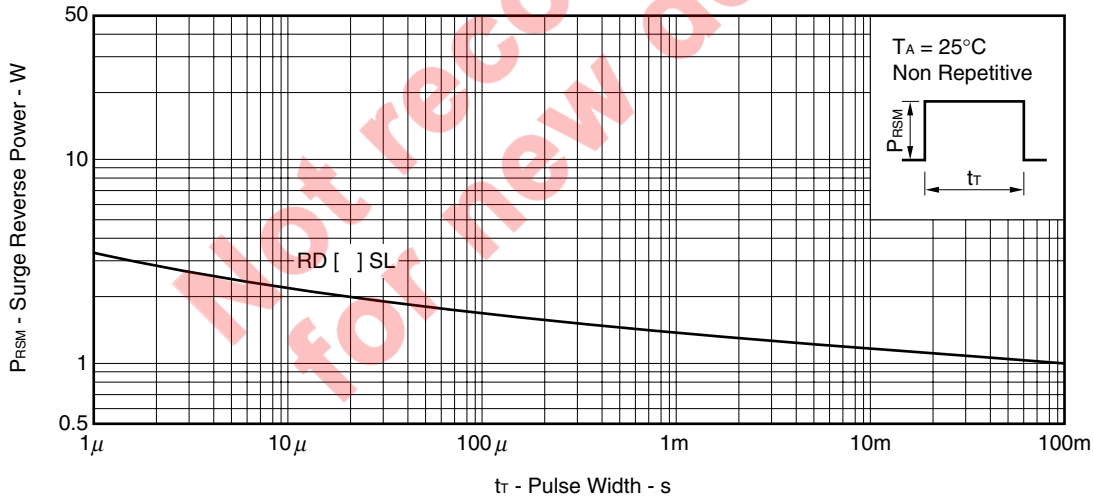
Fig.8 SURGE REVERSE POWER RATINGS



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